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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,607	10/27/2003	Rajeev Sharma	AI-0012-AGE	5728

7590 08/30/2007

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EXAMINER	
BALI, VIKKRAM	

ART UNIT	PAPER NUMBER
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/694,607	SHARMA ET AL.	
	Examiner	Art Unit	
	Vikkram Bali	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In response to the amendment filled on 5/25/2007, all the amendments to the claims have been entered and the action follows:

Response to Arguments

1. Applicant's arguments filed 5/25/2007 have been fully considered but they are not persuasive. Applicants argues the following (see pages 11 and 12 of remarks):

(1) Fundamental approaches of the image processing in Lobo are different from that of applicants. Representation of face region as direct pixel information or any representations obtained by transformation into other spaces by algebraic manipulation is clearly foreign to lobo.

(2) Fundamental difference in the classification methodologies in Lobo and the applicants' current invention.

(3) Age categorization of people from the low-resolution facial images in applicants' present invention is foreign to Lobo.

(4) Automation ability in applicants' present invention is foreign to Lobo.

Regarding (1) and (2), examiner would like to point out that the claim limitations are given their broadest reasonable interpretations, and the specification is not to be read in to the claims. The limitations of Representation of face region as direct pixel information and classification technique is disclose by Lobo in step 400 of figure 1A and camera image in figure 1B, the image is made up of pixels, as claimed in claim 1.

Regarding (3) age categorization of people from the low-resolution facial images. The "the low resolution facial images" is not claimed in any claims.

Regarding (4) automation ability in Lobo. The reference Lobo does has the computer equipment and therefore, does meet the limitation as claimed.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13, 15, 22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Lobo et al (US 5781650).

With respect to claim 13, Lobo discloses capturing a digital image (figure 1B, 10), applying a face extraction process, (see col. 2, lines 42-43), processing face region to extract face features, (see figure 1A, 100) and applying classification technique to face features, (see step 400 of figure 1A), whereby face region is collection of pixels, and whereby face features are representation of pixel, (see camera image in figure 1B, the image is made up of pixels) as claimed.

With respect to claim 15 as best understood, he further discloses steps of applying algebraic space transformations, whereby algebraic transformation is gray scale value of the facial regions (see col. 4, line 45 to col. 5 line 28, there is algebraic space transformations are applied to find the features in the from the face regions, and as seen from the col. 4, lines 48-49, intensity of the image i.e. a gray scale values are use for the transformations) as claimed.

Claims 22 and 24 are rejected for the same reasons as set forth in the rejection of claims 13 and 15.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 14 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobo et al (US 5781650).

With respect to claim 14, Lobo discloses the invention substantially as disclose and as described above in claim 13. However, he fails to explicitly disclose the real time classification, as claimed. But, the system as disclose by the Lobo is automated (see col. 2, lines 37-39) and the real time is based on the rate of the computations, and

this rate of the computation is a design choice. One ordinary skilled in the art at the time of invention can articulate the rate of the computations by simply using the faster processors as available in the time of invention.

Claims 23 is rejected for the same reasons as set forth in the rejection of claim 14.

6. Claims 16, 17, 21, 25-26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobo et al (US 5781650) in view of Degenaro et al (US 6341369).

With respect to claim 16, Lobo discloses the invention substantially as disclose and as described above in claim 13. However, he fails to explicitly disclose a plurality of classifiers, and k-means clustering, as claimed. But, Lobo does disclose two classification such as facial feature ratios and the computation of wrinkle analysis in order to get the age category, and the classifiers does differ in the face features (as facial feature is the ratio of the features see table 7 and the wrinkle analysis is the deformable wrinkles on the face see col. 24, lines 20-23). Degenaro teaches a plurality of classifiers see figure 2, that would help to solicit depending upon the age of the individual. Also, the k-means clustering is well known in the pattern classification methods. This teaching can be incorporated in to the system of Lobo in order to make sure that the ages of the individuals are accounted for.

With respect to claim 17, Lobo further discloses a combination of collection of data and testing the classifier, (see col. 19, and the table 8, the ratios does comprise the data collected and the ratios are tested) as claimed.

Claims 25 and 26 are rejected for the same reasons as set forth in the rejection of claims 16 and 17.

7. Claims 18, 19, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobo et al (US 5781650) in view of Degenaro et al (US 6341369) as applied to claim 16 above, and further in view of Forman et al (US 20020161761).

With respect to claim 18, Lobo and Degenaro discloses the invention substantially as disclose and as described above in claim 16. However, they fail to explicitly disclose the serial arrangement of the classifiers, as claimed. Former in automatic classification method teaches serial arrangement of the classifiers, (see [0005]) as claimed. It would have been obvious to one ordinary skilled in the art at the time of invention to incorporate the teaching of Farmer by articulating the system of Lobo and Degenaro as it is known in the art.

With respect to claim 19, Lobo further discloses the corse and fine age classification, (see abstract wherein it states categories can be further subdivided whereas every three years there could be a new or further age category) as claimed.

Claims 27 and 28 are rejected for the same reasons as set forth in the rejection of claims 18 and 19.

8. Claims 20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobo et al (US 5781650) in view of Degenaro et al (US 6341369) as applied to claim 16 above, and further in view of Katz (US 5943661).

With respect to claim 20, Lobo and Degenaro discloses the invention substantially as disclose and as described above in claim 16. However, they fail to explicitly disclose parallel arrangement of the classifiers, as claimed. Katz discloses the parallel algorithm for classifiers of the pattern classification. It would have been obvious to one ordinary skilled in the art at the time of invention to incorporate the teaching of Farmer by articulating the system of Lobo and Degenaro in order to get batter yield in pattern classification.

Claim 29 is rejected for the same reasons as set forth in the rejection of claims 20.

9. Claim 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobo et al (US 5781650) in view of Degenaro et al (US 6341369) as applied to claim 16 above, and further in view of Fan (US 6996277).

With respect to claim 21, Lobo and Degenaro discloses the invention substantially as disclose and as described above in claim 16. However, they fail to explicitly disclose the serial and parallel arrangement of the classifiers, as claimed. Fan in classification teaches the parallel serial arrangement of the classifiers, as claimed. It would have been obvious to one ordinary skilled in the art at the time of invention to simply combine the two references as they are analogous. And, this can provide a system that could use any arrangement of the classifiers as known in the art (see col. 12 lines 17-19).

Claim 309 is rejected for the same reasons as set forth in the rejection of claims 21.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 571.272.7415. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on 571.272.6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vikkram Bali
Primary Examiner
Art Unit 2624

vb
August 21, 2007